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retrieving base sequence data of the recombinant DNA obtained by a search based on the forward and backward retrieval keys, and specifying a junction between the vector and the object DNA fragment for removing the vector.

REMARKS

A. The August 18, 2000 Office Action

In the Office Action, pending claims 23-26, 28, 29, 31-34 and 36-44 were rejected under 35 U.S.C. §§ 102, 103 and 112. These claims are canceled, and new claims 45-63 are added corresponding thereto.

B. Rejection of Claims Under 35 U.S.C. §§102/103

In the last Response, Applicant amended the independent claims to recite details about determining the first forward and backward retrieval keys using base sequence data of respective restriction enzymes.

Nevertheless, so amended claims 23, 34, 36-41 and 44 were rejected again as being anticipated by Smith et al., and so amended claims 24-26, 28, 29, 31-33, 42 and 43 were rejected as being made obvious by this reference, citing page 1015 thereof, which states:

Prior to assembly, the raw sequences can be checked for the presence of a vector sequence that could adversely affect the assembly. The vector sequences

can be manually entered or imported from a file...The user then establishes the percentage of bases in the cloning vector sequence that must match the bases at the head or at the tail of a fragment sequence to designate a cloning vector. Sequence regions matching the cloning vector at, or above, the specified percentage are automatically removed from the sequence.

Based on this quote, the Examiner concludes that "Smith et al. describe a ... method for removing vector sequences from DNA sequence data by a process of identifying known vector sequences at the beginning and the end of the insert sequence of interest in the DNA sequence data and removing the identified vector sequences...restriction enzyme site detection and storage...is inherent in detection and storage of vector sequences because the vector sequences designated to be deleted comprise restriction enzyme sites." (Emphasis supplied).

In response, it is respectfully submitted that Smith et al. fails to anticipate or render obvious new claims 45-68.

Initially, as noted in the November 12, 1999 Response, "a retrospective view of inherency is not a substitute for some teaching or suggestion which supports the selection and use of the various elements in the particular combination." In re Spormann, 150 U.S.P.Q. 449, 452 (C.C.P.A. 1966). In the present case, it is respectfully submitted that Smith et al. has been cited for including certain inherent teachings, but there has been no explanation as to why such inherency exists in Smith et al., and why one of ordinary skill would be motivated to

rely upon this inherent teaching (if it exists) to arrive at the present invention.

Further, while the claims include numerous limitations, the Examiner has failed to state with specificity the grounds for finding these limitations anticipated or rendered obvious, which is respectfully believed to be inconsistent with PTO Rule 1.104 and MPEP Sections 707.02j and 707.07.

Due to the above-discussed rejection based on inherency and/or the lack of citation of specific disclosure/teaching in the reference relative to the specific recitations of the claims, it is expressly requested that the Examiner better explain the meaning and scope of the Smith et al. reference "teaching", the source of such understanding, and provide an actual application of the disclosure/teaching of Smith against the claim limitations. Under the circumstances, it is respectfully submitted that a final rejection would not be proper.

Notwithstanding the above, as indicated, the examiner has concluded that restriction enzyme site detection is inherent in Smith et al. because the vector sequences designated to be deleted by Smith et al. necessarily comprise restriction enzyme sites. However, just because vector sequences designated to be deleted comprise restriction enzyme sites does not mean that the invention reciting the use of the enzyme sites to determine when and where to remove the vector is anticipated or made obvious.

Smith et al. does not describe using a search key, the base sequence of the restriction-enzyme site that is determined by the restriction-enzyme. Respectfully, the Examiner does not

provide any reasons such a recitation is anticipated or rendered obvious. Instead the Examiner appears to be rejecting the claims merely on Smith et al.'s general or conceptual terms.

Further, at a minimum, there may be other characteristics of the sequences that are also known, but what is the motivation to rely upon any particular characteristics when seeking to improve upon the quality of the desired, isolated object DNA sequences? Thus, while Smith et al. may have a similar goal to the present invention, there is no enabling teaching as to how to obtain the goal. In any case, any suggestion of the "how to" does not arrive at the present invention.

That is, the above quote of Smith et al., and the remainder of the reference, make no mention of any specific vector, lack any discussion of any retrieval key, restriction enzymes or sequence information about the enzymes, and certainly lack any teaching of forward and backward retrieval keys determined using base sequence data of respective restriction enzymes, as recited in the claims herein.

At most, Smith et al. identifies sequences of a vector that match with the head and the end of the inserted fragment sequence, and that the vector can be deleted by knowing the fragment sequence at the head and the end. Smith et al., however, does not teach, at least, determining the interconnecting plane between a vector and the object DNA fragment by using as a retrieval key, the base sequence of the restriction enzyme site that is specified by the restriction enzyme used for cleaving the vector.

C. Section 112, 2nd Paragraph Rejections

In the Office Action, various terms in the claims were considered unclear.

As the Applicant requests above clarification/elaboration of the prior art rejections, and as those clarifications/elaborations may effect claim amendments, it is respectfully requested that any amendments to address the Section 112, para. 2, rejections be deferred to the response to the first Office Action in this continuation application.

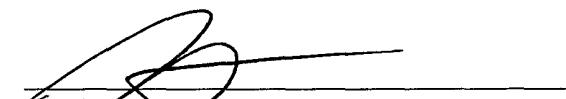
III. CONCLUSION

If there are any remaining formal matters that need to be attended to in this application, it is requested that the Examiner contact the undersigned attorney at the below-identified telephone number at the Examiner's convenience.

If there are any additional fees associated with this Response, please charge same to our Deposit Account No. 19-3935.

Respectfully submitted,

Date: 2/20/01



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